

ORIGINAL ARTICLE

Thyroid Surgery with Small Incision

¹ABSAR NAZIR, ²AAMER ZAMAN KHAN, ³NAEEM GHAFAR, ⁴WASEEM MUHAMMAD, ⁵SAIMA BATOOL

Assistant Professor Surgical Unit I FJMU/SGRH, Professor/Head of Department Surgery Unit I, Pro-Vice Chancellor FJMU/SGRH, Assistant Professor Surgical Unit I FJMU/SGRH, Post Graduate Resident FJMU/SGRH, Lahore. Consultant Histopathologist.

Correspondence: -Dr. Absar Nazir, Assistant Professor Surgical Unit I FJMU/SGRH, Lahore.

Cell: - 03214458511, Email Address:-Abbsar71@hotmail.com.

ABSTRACT

Introduction: Kochker neck incision has been gold standard for the thyroid surgery, which is given transversely 2 cm above the sternal notch and 8-12cm in length. In late nineties minimal invasive techniques gained popularity, one of them is by giving small [3-5cm] midline incision. . We conducted a prospective study to assess the outcome thyroid surgery with smaller incision and factors influencing the incision length.

Method: The study group comprised of 39 patients underwent thyroid surgery with minimal incision, between March 2014 to February 2016 in surgical department of Sir Ganga Ram Hospital Lahore. All patients were operated by same surgical team.

Results: Out of 39pts, 9 patients were male and 30 patients were female. In 16 patients total thyroidectomy was performed and hemi thyroidectomy in 23 patients. Mean length of incision for total thyroidectomy was 4.5cm and 3.6cm in total thyroidectomy. Length of the incision mainly influence by the volume of thyroid tissue, other factors which play minor role are neck circumference and gender.

Conclusion: In our study ,using an anterior small-incision, minimal complication rates ,good cosmeses obtained and more postoperative comfort place this thyroidectomy technique higher than other. Both physician's and patient's satisfaction may be achieved with careful patient selection.

Keywords: Total thyroidectomy, minimal invasive thyroidectomy (MIT).

INTRODUCTION

Most of thyroid surgery done in our set up is performed by giving 8-10cm Kochker incision which has been gold standard for almost a century in all over the world.¹

In late nineties the concept of minimal invasive techniques gained popularity in neck surgery. The idea of minimal invasive surgery is not only giving small incision or sight of incision but minimal tissue dissection during surgery. Therefore, minimal invasive thyroidectomy should be defined as procedure through a small and discrete incision which allows direct approach to the gland, result in minimal dissection. But still we don't have one accepted technique for minimally invasive thyroidectomy (MIT). This includes 3 different techniques, endoscopic thyroidectomy, video-assisted with cervical incision and with open surgery having a midline or lateral incision.^{15, 16}. For Minimally invasive (with small incision) thyroidectomy we don't need any endoscopes and video assistance. Ferzli et al first reported MIT with 2.5 cm. cervical incision, using head light for

visualization². Minimal invasive thyroid surgery can be performed by a direct lateral incision or with a central mini- incision. We report our experience using a mini –incision made transversally between suprasternal notch and the cricoid, which cause less trauma, less hospital stay, good cosmeses and minimal postoperative pain are the basic benefits of MIT.³

MATERIAL AND METHOD

This study was conducted from March 2014 to February 2016 in surgical department of SIR GANGA RAM HOSPITAL LAHORE. The study group comprised of 39 patients with thyroid swelling up to 5cm. All data information included patient vitals, histology, thyroid nodules size, and its complications. Routine pre- and postoperative indirect laryngoscopy was done in all patients.

Exclusion criteria included: positive history of thyroid cancer in family, previous neck surgery or irradiation, fine needle aspiration shows malignancy, and presence of thyroiditis. All procedures were done by the same surgical team

and the length of the incision decided by the surgeon according to his experience. After giving transverse incision between the cricoid and the suprasternal notch the platysma was divided without raising flaps. Then strap muscles were dissected longitudinally to expose the gland. A good exposure gained by delivering ipsilateral gland lobe from the wound and retraction of the lateral wound margins laterally by retractors even in large size multi nodular goiter.

RESULT

Out of 39 patients, 9 were males and 30 were females with ages range from 21 years to 57 years and mean age of 36. y. FNAC revealed follicular neoplasm of 5 (12.82), Nodular Goiter 13[33.3%] and colloid goiter 19 (48.72%) and other 2[5.13%] in this series. Hemi thyroidectomy was done in 23 pts and rest of 16 underwent total thyroidectomy. Mean length of incisions for total thyroidectomy is 4.5cm±1.99 (±2SD) and in hemithyroidectomy mean length is 3.6cm±1.7 [±2]

Table 1. Complications after minimally invasive thyroid surgery (MIT)

Temporary hypocalcaemia	2	Permanent hypocalcaemia	0
Temporary RLN paresis	1	Permanent RLN palsy	0
Reoperation for bleeding	0	Wound infection	0

DISCUSSION

Kochker is the pioneer of the conventional thyroidectomy [1] this approach is still popular all over the world. Thyroid surgery has improved markedly when compared with the time of Kochker (early nineties) because of good knowledge of surgical principles, advanced equipment and development of better surgical techniques.

In many surgical specialties the concept of minimal access surgery gained popularity in late 20th century. Many different minimal invasive techniques for thyroid surgery have gained popularity, which we can classify as minimally invasive open surgery^{4,5,13}, endoscopic techniques and video-assisted techniques.

In open thyroid surgery with small incision, different technical solutions for operative difficulties have been proposed like change in incision sight, flapless incisions use of sections of strap muscles. With time a new surgical technique comes up for thyroidectomy with minimal surgical trauma and better cosmetic result^{12, 14}. This technique is different from conventional thyroidectomy because

it requires only 3-5cm skin incision and without raising any skin flap. In this technique we do minimal tissue dissection by avoiding unnecessary neck exploration, paresthesia or hypoesthesia of the neck and no discomfort while swallowing, which are commonly seen in surgery with large incision and raising of skin flap,^{6,7}.

We found that at University of California, San Francisco, average length of 5.5cm cervical skin incision for total thyroidectomy and 4.6cm for unilateral lobectomy is being used routinely. The 4.1 cm incision for bilateral parathyroid exploration has reduced to 3.2 and 2.8 cm when unilateral parathyroid approach required. It is proved by many studies that current conventional thyroidectomy incision is only required for larger thyroid swellings and swelling of 5cm or less don't need this large incision.

The incision's length is influenced by many factors, and most important is thyroid volume which is the number one independent predictor of size of incision for thyroidectomy.^{8,9} and other important factors include circumference of neck, disease and gender^{17,18}.



Thyroid Surgery with Small Incision

We raise this question in our study that what is really minimal invasive thyroid surgery and what parameter should be considered for its definition. Different studies proposed criteria's like post-operative pain, duration of surgery, cosmetic results, cost and cure of the disease).^{10,11}. As the length of incision is only one of the criteria, overall invasiveness of the procedure should be considered which is far less in open minimal invasive thyroid than pure endoscopic techniques and video-assisted techniques.

CONCLUSION

In our study we observed that minimally invasive techniques using a small cervical incision have less postoperative pain and good cosmetic results as compared to conventional method. So it is a safe technique to adopt in selected patients in our setup.

REFERENCE

1. Kazi R, Katna R, Dwivedi RC. Minimal access thyroid surgery a new dawn? *Ann R Coll Surg Engl* 2010; 92:361-2.
2. Ferzli GS, Sayad P, Abdo Z et al. Minimally invasive, non endoscopic thyroid surgery. *Journal of the American College of Surgeons*. 2001;192 :665-8.
3. Norman J, Chheda H, Farrell C. Minimally invasive parathyroidectomy for primary hyperparathyroidism: decreasing operation time and potential complications while improving cosmetic result. *The American Surgeon*, 1998;64: 391-96
4. Ikeda Y, Takami H, Tajima G, Sasaki Y, Takayama J, Kurihara H, Niimi M. Total endoscopic thyroidectomy: axillary or anterior chest approach. *Biomed Pharmacother* 2002; 56 Suppl 1: 72s-78s.
5. Ikeda Y, Takami H, Sasaki Y, Kan S, Niimi M. Endoscopic neck surgery by the axillary approach. *J Am Coll Surg* 2000; 191: 336-40.
6. Kamer E, Unalp H, Derici H, Akguner T, Erbil Y, Issever H, Peskersoy M: Flapless conventional thyroidectomy: a prospective, randomized study. *Surg Today* 2010, 40(11):1018-1022
7. Ikeda Y, Takami H, Tajima G, Sasaki Y, Takayama J, Kurihara H, Niimi M. Direct mini-incision thyroidectomy. *Biomed Pharmacother*. 2002;56 Suppl 1:60s-63s
8. Ferzli GS, Sayad P, Abdo Z, Cacchione RN. Minimally invasive, nonendoscopic thyroid surgery. *J Am Coll Surg*. 2001;192:665-668
9. Gagner M, Inabnet WB. Endoscopic thyroidectomy for solitary thyroid nodules. *Thyroid*. 2001;11:161-163
10. Takami H, Ikeda Y. Minimally invasive thyroidectomy. *ANZ J Surg* 2002; 72: 841-2[8]
11. Cavicchi O, Piccin O, Ceroni AR, Caliceti U. Minimally invasive nonendoscopic thyroidectomy. *Otolaryngol Head Neck Surg* 2006; 135: 744-7.
12. Linos DA. Minimally invasive thyroid surgery. In: Frezza E, Gagner M, Li MKW, editors. *International principles of laparoscopic surgery*. Woodbury, CT: Cinemed; 2010. pp. 531-7
13. Henry JF. Minimally invasive surgery of the thyroid and parathyroid glands. *Br J Surg*. 2006;93:1-2.
14. Park YL, Han WK, Bae WG. 100 cases of endoscopic thyroidectomy: breast approach. *Surg Laparosc Endosc Percutan Tech*. 2003;13:20-25.
15. Stalberg P, Delbridge L, van Heerden J, Barraclough B. Minimally invasive parathyroidectomy and thyroidectomy—current concepts. *Surgeon*. 2007;5:301-308.
16. Ruggieri M, Straniero A, Maiuolo A, Pacini FM, Chatelou E, Batori M, D'Armiento M, Fumarola A, Gargiulo P, Genderini M. The minimally invasive surgical approach in thyroid diseases. *Minerva Chir*. 2007;62:309-314.
17. Cavicchi O, Piccin O, Ceroni AR, Caliceti U. Minimally invasive non endoscopic thyroidectomy. *Otolaryngol Head Neck Surg*. 2006;135:744-7.
18. Brunaud L, Zarnegar R, Wada N, Ituarte P, Clark OH, Duh QY. Incision length for standard thyroidectomy and parathyroidectomy: when is it minimally invasive? *Arch Surg*. 2003;138:1140-3.
19. Terris DJ, Gourin CG, Chin E. Minimally invasive thyroidectomy: basic and advanced techniques. *Laryngoscope*. 2006;116:350-6.